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Nutrition Education in Public Elementary and Secondary Schools

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National Center for Education Statistics
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Highlights

- Practically all public schools (99 percent) offer nutrition education somewhere within the curriculum, and many integrate it within the total curriculum (70 percent). Nutrition education is concentrated within the health curriculum (84 percent), science classes (72 percent), and school health program (68 percent) (table 1). Although nutrition education is an active area, the intensity and quality of the nutrition messages students are receiving is not known.

- For each grade from kindergarten through eighth, 50 percent or more of all schools have district or state requirements for students to receive nutrition education. However, only 40 percent have these requirements for ninth and tenth grades; and about 20 percent for eleventh and twelfth grades (figure 1).

- Topics in nutrition covered by more than 90 percent of all schools are: the relationship between diet and health, finding and choosing healthy foods, nutrients and their food sources, the Food Guide Pyramid, and the Dietary Guidelines and goals (table 4). However, with the exception of the Food Guide Pyramid, less than half of schools cover these topics thoroughly.

- Overall, schools focus on increasing students' knowledge about what is meant by good nutrition, with less emphasis on influencing students' motivation, attitudes, and eating behaviors. Four of the five topics covered by more than 90 percent of all schools are related to knowledge. With the exception of finding and choosing healthy foods, less than one-third of schools provide thorough coverage of topics related to motivation, attitudes, and eating behaviors (table 4).

- Research has shown that schools or districts where the nutrition education efforts are coordinated by a person or group have an opportunity to present a more focused message to students about the importance of healthy eating. However, the majority of schools (61 percent) have no nutrition education coordination, meaning each teacher is responsible for his or her own lessons (table 6).

- Most schools use materials developed by teachers in their schools (90 percent), health or science textbooks (89 percent), and materials developed for a specific grade level (83 percent) (table 10).

- Ninety-seven percent of schools report receiving nutrition lesson materials from at least one source outside the school, most often from professional or trade associations (87 percent), and the food industry (86 percent). However, for any given outside source, only 37 percent or less of schools used all or

most of the materials received. Of the materials from sources outside the school, schools reported the highest classroom usage for those received from the food industry or commodities groups, professional or trade associations, the USDA Food and Nutrition Information Center, and state education agencies (table 8).

- Over 90 percent of all schools offer nutrition education through the school meals program. Most information is offered through bulletin boards with nutrition displays (65 percent) or during school lunch week (51 percent). Less than half of school meals programs offer nutrient information, serve meals to correspond with classroom activities, give tours or provide nutrition input to newsletters. Less than one quarter of school meals programs provide nutrition education in the classroom or conduct tasting parties (table 11).

- Most respondents (84 percent) are of the opinion that the meals programs in their schools follow generally healthy eating practices (figure 5). Schools reporting that their meals programs follow healthy eating practices are substantially more likely to be involved in nutrition education activities than those that do not report following them (table 14).

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Introduction

The link between food and health has been well documented by numerous studies and reports describing the impact of dietary intake on disease prevention and health promotion. Dietary recommendations and long-term health objectives, including the *Dietary Guidelines for Americans*[1] and the Year 2000 Health Objectives for the Nation,[2] call for Americans to reduce intake of total fat, saturated fat, and cholesterol; increase intake of fruits, vegetables, grain products, and foods rich in calcium; and moderate intake of sugars, salt, and alcohol.

Many Americans consume excess calories for their level of activity, and have diets inconsistent with the Dietary Guidelines for Americans--too high in fat, sodium, and sugar, with not enough grains, fruits, and vegetables. These unhealthy eating patterns may contribute to illness and premature death in the long term.

> Dietary factors are associated with 5 of the 10 leading causes of death: coronary heart disease, some types of cancer, stroke, noninsulin-dependent diabetes mellitus, and atherosclerosis.[3]

Because eating habits developed during childhood have the potential to last a lifetime, it is important for children to learn about the benefits of good nutrition. Therefore, the Child Nutrition Act of 1966 views nutrition education as "a matter of highest priority."[4] Its importance is further addressed in *Healthy People 2000*, the list of health objectives developed by the U.S. Public Health Service, in which the public health community seeks, by the year 2000, to increase to at least 75 percent the proportion of the Nation's schools that provide nutrition education from preschool through 12th grade, preferably as a part of quality school health education. Education to establish healthy eating habits early in life can "assure that individuals have the information and skills they need to protect and enhance their own health and the health of their families."[5]

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[1] *Dietary Guidelines for Americans*. U.S. Department of Agriculture and U.S. Department of Health and Human Services. Home and Garden Bulletin No. 232. Fourth Edition. 1995.

[2] *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*. 1991. U.S. Department of Health and Human Services. Public Health Service. (PHS) 91-50212.

[3] *Healthy People 2000*, p. 112.

[4] See Appendix D, Child Nutrition Act: P.L. 103-448, Sec. 19(a).

[5] *Healthy People 2000*, p. 251.

The education community is also supportive of nutrition education goals. A guide for the education community, the *National Education Goals* in the *Goals 2000: Educate America Act* states that, by the year 2000, "all students will have access to physical education and health education to ensure they are healthy and fit."

The U.S. Department of Agriculture (USDA) actively supports these Year 2000 Goals through its *School Meals Initiative for Healthy Children*,[6] which promotes proper nutrition and nutrition education for children based on the Dietary Guidelines for Americans and the Food Guide Pyramid. This initiative requires schools to serve meals that meet Federal Dietary Guidelines and to teach children about nutrition so they will choose foods that are good for them. The USDA established Team Nutrition to help schools implement the new requirements in the School Meals Initiative. The mission of Team Nutrition is to improve the health and education of young people by creating innovative public and private partnerships that promote food choices for a healthful diet through media, schools, families, and the community. Team Nutrition is working toward its goals through two initiatives which include training and technical assistance to school food service personnel and adequate nutrition education for children.[7]

In-school efforts emphasize the importance of nutrition education to the success of nutrition policy changes in school meals.

> It is not enough to change the food on the plate. We must also provide the knowledge and the skills that enable children to make choices that lead to a nutritious diet and improved health. It also is vital that local meal providers receive training on how to improve meal quality. This dual initiative to educate children and assist meal providers offers many opportunities to influence both what foods are offered by schools and what foods are eaten by children.[8]

These efforts are supplemented with materials developed and distributed through partner networks and directly by USDA's Food and Consumer Service and its Cooperative State Research, Education, and Extension Service, as well as other government agencies such as the Department of Education and the Department of Health and Human Services.

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[6] Part of the implementation of the National School Lunch Program. 7CFR Parts 210 and 220.

[7] *Team Nutrition.* 1995. U.S. Department of Agriculture.

[8] Federal Register, June 13, 1995.

This report presents the findings from the survey *Nutrition Education in Public Schools, K-12* that was requested by the Food and Consumer Service of the USDA. It was designed to provide data on the status of nutrition education in U.S. public schools in order to help track current and future initiatives. The survey was conducted during the spring of 1995 through the Fast Response Survey System (FRSS) of the National Center for Education Statistics (NCES) by Westat, Inc., a research firm in Rockville, Maryland.

The questionnaires were sent to 1,000 school principals of a nationally representative sample of U.S. public elementary, middle, and high schools (see Appendix A for survey methodology). The principals were asked to assign the completion of the survey to the person most knowledgeable about nutrition education at the school. Respondents were encouraged to consult with others if they were unsure of the answer to a question. The survey requested information about the following issues:

- The placement of nutrition education in the curriculum,
- The content of nutrition instruction,
- The coordination of nutrition education, and
- Resources for nutrition education.

Survey findings are presented for all schools and frequently by the following school characteristics:

- School instructional level: elementary school; middle school; and high school.
- School enrollment size: small (less than 300); moderate (300-499); and large (500 or more).
- Metropolitan status of school: city; urban fringe; town; and rural.
- Geographic region: Northeast; Southeast; Central; and West.

Data have been weighted to national estimates of public schools. All comparative statements made in this report have been tested for statistical significance though chi-square tests or t-tests adjusted for multiple comparisons using the Bonferroni adjustment and are

significant at the .05 level or better. However, not all statistically significant comparisons have been presented.

Nutrition Education in the School Curriculum

Practically all public schools (99 percent) offer nutrition education somewhere within the curriculum and many integrate it within the total curriculum (70 percent) (table 1). The most common placement is within the health curriculum (84 percent), but many schools also teach nutrition through science classes (72 percent), or through a school health program (68 percent). While this does not provide information about the intensity or quality of the nutrition messages students are receiving, it shows that the messages are being conveyed in a variety of ways within the schools.

Table 1.—Percent of public schools offering nutrition education within the school curriculum, by school characteristics: 1995

School characteristic	Somewhere within curriculum	Integrated within the total curriculum	Health curriculum	Science curriculum	School health program	Home economics curriculum
All public schools...	99	70	84	72	68	41
Instructional level						
Elementary school.....	100	80	81	73	67	16
Middle school.....	99	55	85	71	66	72
High school	99	50	93	71	73	92
Size of enrollment						
Small.....	99	71	82	69	66	44
Moderate.....	99	72	83	74	68	27
Large.....	99	68	86	74	69	49
Metropolitan status						
City	99	78	83	73	66	29
Urban fringe.....	99	68	82	70	69	36
Town.....	99	69	85	70	69	44
Rural	100	65	85	76	68	53
Geographic region						
Northeast.....	100	72	79	75	71	40
Southeast.....	100	71	78	71	70	38
Central	100	68	88	69	69	45
West.....	98	69	88	75	65	41

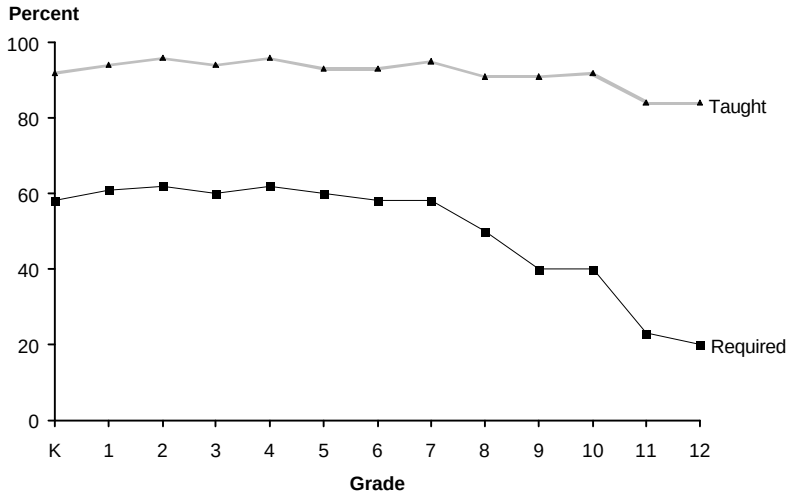
NOTE: Respondents could report nutrition education in more than one place.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Given their classroom organization, elementary schools (80 percent) tend more than schools at other instructional levels to offer nutrition education integrated within the total school curriculum, although half or more of middle and high schools also reported this. High schools are most likely to place nutrition education within the health curriculum (93 percent) and the home economics curriculum (92 percent). The health curriculum is also the most common placement for nutrition education in middle schools (85 percent). Fifty-three percent of rural schools offer nutrition education through the home economics curriculum, compared with 29 percent of city schools.

Nutrition is taught in each and every grade from kindergarten through tenth grade in over 90 percent of all public schools; it is taught in eleventh and twelfth grades in over 80 percent of schools (figure 1 and table 2). These statistics do not reflect the proportion of students participating at each grade level, but give a broad overview of nutrition education offerings. The percent of schools with nutrition education requirements is substantially lower at each grade level than the percent of schools that teach nutrition. For each grade from kindergarten through eighth, at least 50 percent of all schools have district or state requirements for students to receive nutrition education; 40 percent have these requirements for ninth and tenth grades; about 20 percent for eleventh and twelfth grades (figure 1 and table 3).

Figure 1.—Percent of public schools where nutrition is taught and where nutrition education is required, by grade: 1995



SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 2.—Percent of public schools where nutrition is taught, by grade and geographic region: 1995

Grade	All public schools	Northeast	Southeast	Central	West
Kindergarten	92	90	93	92	91
1st grade	94	89	94	95	96
2nd grade	96	92	97	97	96
3rd grade	94	92	97	93	95
4th grade	96	93	100	95	95
5th grade	93	90	98	91	94
6th grade	93	94	97	91	92
7th grade	95	92	99	96	91
8th grade	91	89	95	94	88
9th grade	91	84	91	93	93
10th grade	92	88	95	89	95
11th grade	84	86	90	81	82
12th grade	84	83	89	82	82

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

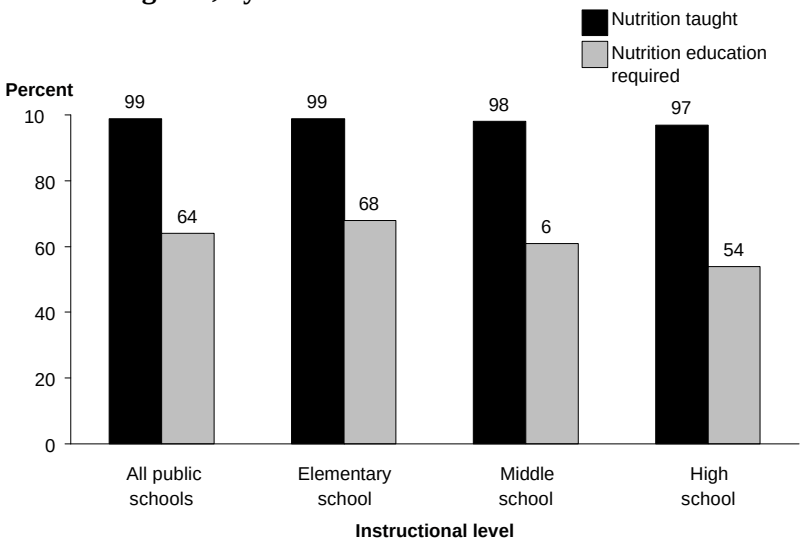
Table 3.—Percent of public schools where nutrition education is required, by grade and geographic region: 1995

Grade	All public schools	Northeast	Southeast	Central	West
Kindergarten	58	58	65	58	53
1st grade	61	62	66	61	55
2nd grade	62	62	70	64	55
3rd grade	60	60	68	61	54
4th grade	62	60	75	68	51
5th grade	60	59	72	59	54
6th grade	58	58	66	56	54
7th grade	58	62	64	57	51
8th grade	50	51	58	48	46
9th grade	40	37	49	37	39
10th grade	40	39	39	36	45
11th grade	23	36	21	21	20
12th grade	20	28	21	20	16

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Among all schools, 99 percent teach nutrition in at least one of their grades, and 64 percent require nutrition education in at least one of their grades (figure 2). Substantially more elementary schools than high schools require nutrition education in at least one of their grades (68 versus 54 percent).

Figure 2.—Percent of public schools where nutrition is taught and where nutrition education is required in at least one grade, by instructional level: 1995



SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Nutrition Education Topics

Nutrition education in the classroom is intended to accomplish three important objectives.[9] The first is to convey needed information, or the facts about nutrition, so students are knowledgeable about healthy eating practices. The second is to change unhealthy attitudes so students have the motivation to establish healthy eating practices. The third is to teach positive skills so students have all the tools to accomplish their nutritional goals. The challenge is to further these objectives in ways that are age-appropriate and that respect personal and cultural preferences. The survey included a list of 17 nutrition topics that were divided into the following 3 categories: knowledge, motivation and attitudes, and behavior.[10] Respondents reported which of the topics are covered in any grade in the school, the extent of coverage (for those topics covered), and which topics represent a main focus of nutrition education at the school.

Schools reported covering a wide range of topics. Each of the 17 topics are covered in the nutrition curricula of at least 60 percent of schools (table 4). Topics covered by more than 90 percent of schools, and covered thoroughly by the greatest percent, are the following:

[9] Collins, Janet L., Leavy Small, M., Kann, L., Collins Pateman, B., Gold, R., and Kolbe, L., "School Health Education." *Journal of School Health*, 65(8) (October 1995):302.

[10] See Appendix C, Survey Form, Question 2.

- The relationship between diet and health,
- Finding and choosing healthy foods,
- Nutrients and their food sources,
- The Food Guide Pyramid, and
- Dietary guidelines and goals.

Table 4.—Percent of public schools that cover various topics in nutrition education, the percent that cover them thoroughly, and the percent for whom the topic represents a main focus of nutrition education at their school: 1995

Topic	Covered	Covered thoroughly	Represents a main focus*
Relationship between diet and health	97	45	47
Finding and choosing healthy foods	97	40	34
Nutrients and their food sources	96	43	42
Food Guide Pyramid	94	53	47
Dietary guidelines and goals	92	38	35
Reading food labels	90	32	8
Influences on food choices, such as habits, advertising, beliefs, and cultural preferences	87	21	15
Changing eating habits (e.g., willingness to try new foods)	85	20	9
Link between diet and diseases such as hypertension, heart disease, and cancer	83	29	13
Interpreting nutritional information from food labels	83	31	9
Healthy weight control	82	23	5
Preparing healthy food	78	32	8
Developing a personal nutrition plan	74	22	4
Body image	72	18	4
Signs and symptoms of eating disorders and health risks of diets, pills, binging, and purging	71	28	8
Keeping a food diary	61	22	1
Association between eating and stress	60	17	4

*Schools were asked to report up to three.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Many topics are covered at all instructional levels. However, high schools are more likely to cover such age-appropriate topics as healthy weight control, body image, eating disorders, and the association between eating and stress; middle schools are next most likely; and elementary schools are least likely to cover these topics (table 5).

Table 5.—Percent of public schools that cover various topics in nutrition education, by instructional level: 1995

Topic	All public schools	Elementary school	Middle school	High school
Relationship between diet and health	97	96	97	99
Finding and choosing healthy foods	97	96	96	99
Nutrients and their food sources	96	95	96	99
Food Guide Pyramid	94	93	94	96
Dietary guidelines and goals	92	90	93	97
Reading food labels	90	86	94	98
Influences on food choices, such as habits, advertising, beliefs, and cultural preferences	87	83	90	96
Changing eating habits (e.g., willingness to try new foods)	85	82	84	96
Link between diet and diseases such as hypertension, heart disease, and cancer	83	76	93	96
Interpreting nutritional information from food labels	83	77	91	97
Healthy weight control	82	74	91	98
Preparing healthy food	78	69	89	95
Developing a personal nutrition plan	74	66	81	90
Body image	72	62	82	93
Signs and symptoms of eating disorders and health risks of diets, pills, binging, and purging	71	57	89	98
Keeping a food diary	61	51	71	82
Association between eating and stress	60	46	75	92

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Schools were asked to select the three topics that represent a main focus of nutrition education at their schools. The Food Guide Pyramid and the relationship between diet and health were each selected by 47 percent of all schools surveyed. Nutrients and their food sources were selected by 42 percent of schools, and 35 percent selected dietary guidelines and goals as part of the school's main focus (table 4).

Coordination of Nutrition Education

Research has shown that schools or districts where the nutrition education efforts are coordinated by a person or group have an opportunity to present a more focused message to students about the importance of healthy eating. Coordination can integrate the curriculum across grades so the nutrition lessons at each grade level build on the previous year's lessons, can integrate the nutrition messages across subjects within a grade, and can integrate classroom nutrition lessons with related nonclassroom activities. In addition, coordinators can act as repositories and resources for materials received by the school or district.

Schools reported the manner in which their nutrition education efforts are coordinated by a person or group. The majority of public schools (61 percent) have no nutrition education coordination, meaning each teacher is responsible for his or her nutrition lessons (table 6). About 9 percent of the schools have one person within the school coordinating nutrition education; 24 percent coordinate using a group or committee; and about 6 percent have someone outside the school, for example from the district, coordinate nutrition education. Coordination from outside the school is more likely for elementary schools (8 percent) compared with middle schools (3 percent), and for city schools (13 percent) compared with town (3 percent) or rural schools (3 percent). A school's type of nutrition education coordination does not affect the curriculum placement of nutrition education within the school (table 7).[11]

[11] Because of the smaller sample sizes for each type of coordination, the standard errors for these percents were large (see Table 7a in Appendix B). Therefore, the differences shown in table 7 are not statistically significant.

Table 6.—Percent of public schools with various types of nutrition education coordination, by school characteristics: 1995

School characteristic	One person for the whole school	Several teachers, a group or committee	Someone outside the school*	No coordination effort
All public schools....	9	24	6	61
Instructional level				
Elementary school.....	7	19	8	66
Middle school	14	40	3	44
High school.....	12	25	4	59
Size of enrollment				
Small	10	19	6	66
Moderate	10	21	6	62
Large	9	28	6	57
Metropolitan status				
City.....	8	20	13	59
Urban fringe.....	9	24	7	60
Town	13	28	3	56
Rural.....	8	23	3	67
Geographic region				
Northeast	13	21	7	59
Southeast	6	25	9	60
Central.....	11	28	5	56
West	8	19	6	67

*For example, from the district.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 7.—Percent of public schools offering nutrition education within the school curriculum, by person or group responsible for coordinating nutrition education: 1995

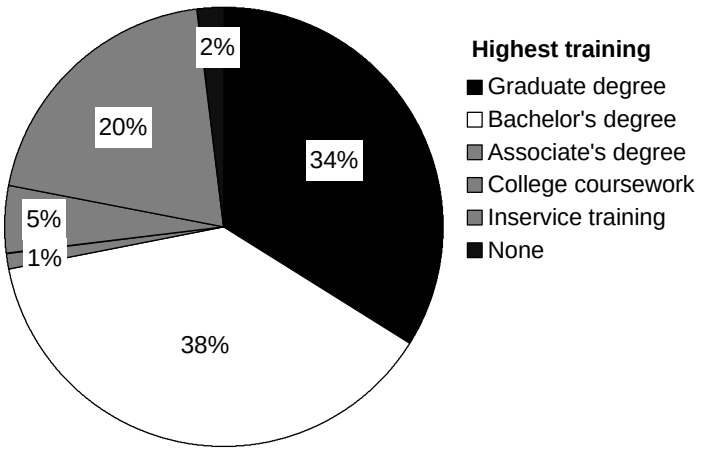
Placement of nutrition education	One person for the whole school	Several teachers, a group or committee	Someone outside the school*	No coordination effort
Integrated within the total curriculum.....	60	68	83	70
Health curriculum	79	88	90	82
Science curriculum.....	65	72	70	74
School health program...	68	81	74	62
Home economics curriculum.....	47	52	17	39

*For example, from the district.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

The educational background and training of the people responsible for coordination of nutrition education varies among the small number of schools that have a single coordinator on staff (figure 3). Seventy-two percent have a coordinator with a bachelor's degree or higher in nutrition or a nutrition-related area. About 61 percent have a coordinator, regardless of education level, who has completed some inservice or other training in nutrition or a nutrition-related area (not shown in a table).

Figure 3.—Percent of coordinators with various highest levels of training in nutrition or a nutrition-related area: 1995



NOTE: Based on the estimated number of public schools with a single nutrition education coordinator: 7,290 (9 percent).

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Resources for Nutrition Education

Nutrition education resources available to schools include not only curriculum and other lesson materials but also the school meals program, guest speakers, and assemblies and other events. All of these can be coordinated to enhance positive nutrition messages. The FRSS survey asked schools about receiving these resources and the extent to which resources received are used at their schools.

Materials Used to Teach Nutrition

Various types of materials are commonly used by schools to teach nutrition in the classroom. Most schools use materials developed by teachers in their schools (90 percent), health or science textbooks (89 percent), and materials developed for a specific grade level (83 percent) (table 8). High schools are more likely than schools at other instructional levels to use state-recommended (79 percent) or state-mandated (58 percent) materials for nutrition instruction, and elementary schools (44 percent) are more likely than middle schools (33 percent) to use materials developed by a district-level curriculum coordinator (table 8).

Table 8.—Percent of public schools that use various types of materials to teach nutrition education, by instructional level: 1995

Type of material used	All public schools	Elementary school	Middle school	High school
From external sources	92	93	90	94
Developed by teachers in the school	90	90	87	93
Health or science textbooks	89	87	90	93
Developed for a specific grade level	83	87	81	74
State-recommended	65	61	64	79
State-mandated	44	40	43	58
Developed by district-level curriculum coordinator	40	44	33	35

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Sources of Materials

Many schools use packaged materials and lesson plans for nutrition instruction. Given a list of 10 outside sources, schools were asked to identify those from which they received nutrition education resources for teaching, and the extent to which the resources were used at their school. Ninety-seven percent of schools report receiving nutrition lesson materials from at least one source outside of the school, most often from professional or trade

associations (87 percent) and the food industry or commodities groups, such as the Dairy Council or the Potato Board (86 percent) (table 9).

Table 9.—Percent of public schools that receive and use materials for nutrition education from various sources: 1995

Source	Materials received	All or most materials used*
All sources	97	-
Professional or trade association	87	32
Food industry or commodities group	86	37
School library	71	33
Cooperative Extension Service	65	22
USDA Food and Nutrition Information Center	64	32
State education agency	58	31
State Nutrition Education Training (NET) Program	42	29
American School Food Service Association	40	26
Colleges or universities	35	18
National Food Service Management Institute	26	24

*Of schools that received the materials.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

The two Federal government sources, the Cooperative Extension Service (also known as the USDA Extension Service) and the USDA Food and Nutrition Information Center, were identified by over 60 percent of schools as sources for lesson materials and other resources. The Cooperative Extension Service has as its mission to diffuse practical information about agriculture, home economics, and rural energy. Rural schools (78 percent) and small schools (75 percent) are most likely to receive materials from this source (table 10). Because of the sample size for this survey, the effects of school size cannot be distinguished from the effects of metropolitan status through a multivariate analysis, but among all public schools in the U.S., small schools tend to be rural and rural schools tend to be small.

Table 10.—Percent of public schools that receive and use materials for nutrition education from the Cooperative Extension Service, by school characteristics: 1995

School characteristic	Materials received	All or most materials used*
All public schools	65	22
Size of enrollment		
Small	75	24
Moderate	67	18
Large	57	23
Metropolitan status		
City	57	24
Urban fringe	45	19
Town	72	25
Rural	78	20

*Of schools that received the materials.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Of the materials from sources outside the school, schools reported the highest classroom usage for those received from the food industry or commodities groups, professional or trade associations, the USDA Food and Nutrition Information Service, and state education agencies (table 9).

School Meals Program

Healthy People 2000 states that "optimally, school nutrition education should include educational cafeteria experiences as well as classroom work."[12] It appears that most schools are taking some steps toward achieving this goal. Ninety-one percent of all schools offer nutrition education for students in some way through the school meals program: 93 percent of elementary, 88 percent of middle, and 86 percent of high schools (table 11). More than half of elementary schools reported displaying nutrition information on the cafeteria bulletin board and sponsoring a "school lunch week" where parents eat with students and participate in other activities. Meals programs in elementary schools are more likely than those at other instructional levels to provide kitchen tours.

[12] *Healthy People 2000*, p. 127.

Table 11.—Percent of public schools where the school meals program provides nutrition education or coordinates with classroom efforts, by instructional level: 1995

Meals program effort	All public schools	Elementary school	Middle school	High school
Any effort	91	93	88	86
Bulletin board with nutrition displays	65	68	63	57
School lunch week	51	57	45	37
Nutrient information	48	49	46	47
Serves meals to correspond with classroom activities	46	49	44	37
Tours	35	39	27	28
Nutrition input to newsletter	32	36	29	20
Education in classroom	22	25	16	18
Tasting parties	21	24	19	15

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 12.—Percent of public schools where the school meals program provides nutrition education or coordinates with classroom efforts, by geographic region: 1995

Meals program effort	All public schools	Northeast	Southeast	Central	West
Any effort	91	91	96	89	88
Bulletin board with nutrition displays	65	57	85	60	60
School lunch week	51	40	69	49	46
Nutrient information	48	49	61	41	44
Serves meals to correspond with classroom activities	46	51	60	37	41
Tours	35	28	51	28	34
Nutrition input to newsletter	32	34	41	29	26
Education in classroom	22	16	38	18	19
Tasting parties	21	17	39	15	18

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

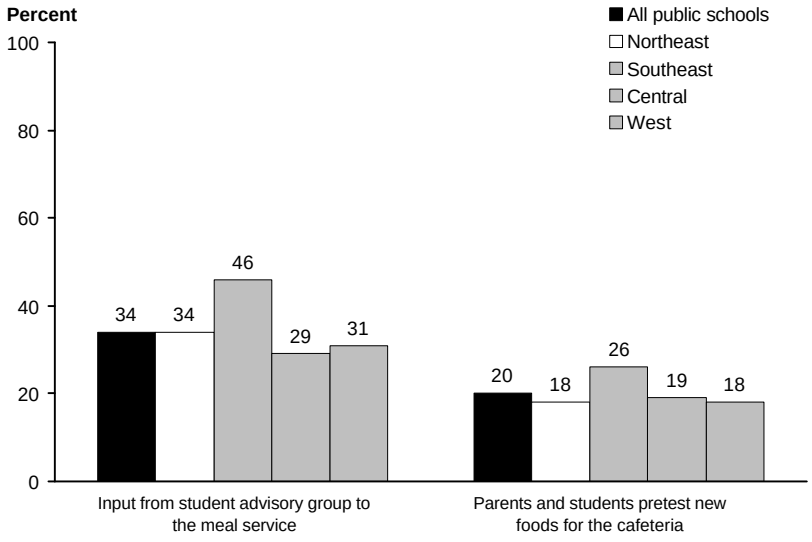
In addition to actively providing education, the meals program can support nutrition education by involving students in school menu planning and making healthy foods available at school for students to choose. About a third of all school meals programs solicit input from student advisory groups, and about 1 in 5 ask parents and students to pretest new foods (table 13 and figure 4).

Table 13.—Percent of public schools where the school meals program solicits input through a student advisory group or pretesting new foods, by instructional level: 1995

Type of input	All public schools	Elementary school	Middle School	High school
Student advisory group provides input to the meal service	34	34	37	34
School food service director has parents and students pretest new foods for the cafeteria	20	20	24	17

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

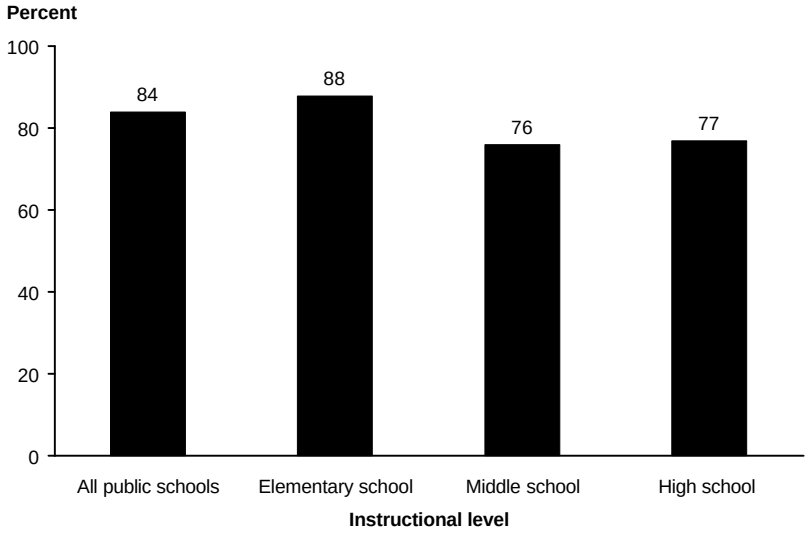
Figure 4.—Percent of public schools that report student and parent input into the meals program, by geographic region: 1995



SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Most respondents (84 percent) are of the opinion that their school meals programs follow generally healthy eating practices (as defined by the respondent) (figure 5). In schools where this is not the case, students can receive inconsistent messages about food choices. In addition, schools reporting that their meals programs follow healthy eating practices are substantially more likely to be involved in nutrition education activities than those that are reported as not following them. For example, 25 percent of meals programs described as healthy provide nutrition education in the classroom versus 7 percent of those not described as healthy. Those described as healthy also more often serve meals coordinated with classroom activities (51 versus 17 percent), and more often have cafeteria bulletin boards with nutrition displays (72 versus 29 percent) (table 14).

Figure 5.—Percent of respondents who are of the opinion that their school meals program follows generally healthy eating practices, by instructional level: 1995



SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 14.—Percent of public schools that report various meals program efforts, by whether the respondent is of the opinion that their school meals program follows generally healthy eating practices: 1995

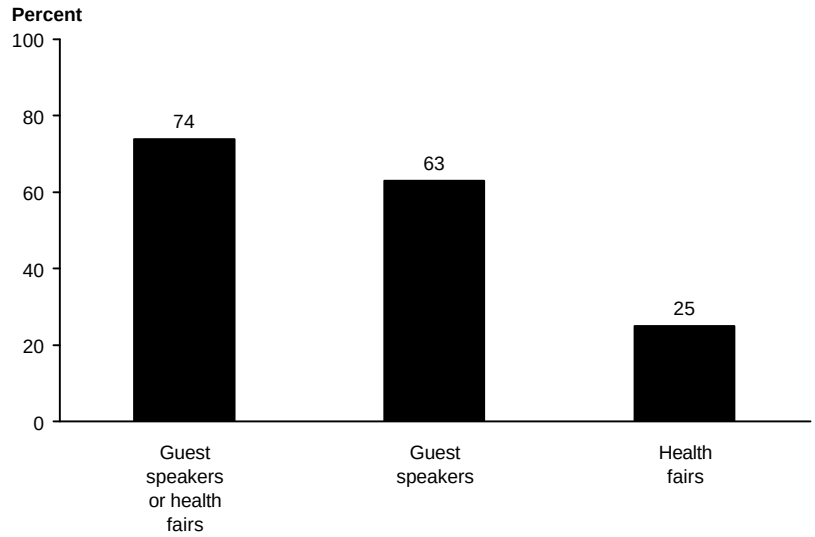
Meals program effort	Reported following generally healthy eating practices	Reported not following generally healthy eating practices
Bulletin board with nutrition displays	72	29
School lunch week	57	19
Nutrient information	54	18
Serves meals to correspond with classroom activities	51	17
Tours	39	13
Nutrition input to newsletter	37	6
Education in classroom	25	7
Tasting parties	25	3

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Other Resources

Nutrition lessons can also be imparted through special events such as assemblies, guest speakers, or health fairs. Just about three-quarters of schools reported using special events in the past year: 63 percent used guest speakers on nutrition and 25 percent held health fairs (figure 6).

Figure 6.—Percent of public schools that use special events for nutrition education: 1995



SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Summary and Conclusions

Nutrition education is important because it has the potential to improve the health and extend the lives of generations of Americans. The results of this survey indicate that nutrition education is of great interest to educators. It is offered by most public schools, is covered in many grades, and a wide range of topics are covered. However, even though nutrition education is an active area, the intensity and quality of the nutrition messages students are receiving is not known. In addition, because nutrition education is concentrated in the health curriculum, science classes, and school health programs, the proportion of students participating at each grade level is not known. There appears to be room for additional coordination of nutrition education across different subjects within the curriculum, across grade levels, and between the curriculum and the school meals program.

The survey findings also indicate that schools are focusing on increasing students' knowledge about what is meant by good nutrition, with less emphasis on influencing students' motivation, attitudes, and eating behaviors. One objective of nutrition education is to increase knowledge. Other objectives are to change unhealthy attitudes so students have the motivation to establish healthy eating practices and teach positive skills so students have all the tools to accomplish their nutritional goals. However, less than one-third of schools that covered topics related to motivation, attitudes, or behavior provided thorough coverage of those topics.

Schools use various types of materials to teach nutrition in the classroom. However, while almost all schools receive nutrition lesson materials from sources outside the school, schools do not use all or most of the materials received. Most schools use materials developed by teachers in the school and developed for a specific grade level. These results may suggest that nutrition education could benefit from development of appropriate materials, including age-appropriate materials and materials designed to assist teachers in preparing their own nutrition education lessons.

There is potential for the school meals program to assume a more active role in nutrition education. Most schools are taking only some steps toward achieving the *Healthy People 2000* goal of including educational cafeteria experiences as well as classroom work in school nutrition education. The majority of effort consists of displaying a bulletin board with nutrition messages, with few school meals programs offering nutrient information, providing nutrition education in the classroom, or conducting other educational activities.

Although schools or districts where the nutrition education efforts are coordinated have an opportunity to present a more focused message to students about the importance of healthy eating, most schools do not have a nutrition coordinator. A person or group with responsibility for coordination can integrate the curriculum across grades so the nutrition lessons at each grade level build on the previous year's lessons, integrate the nutrition messages across subjects within a grade, and integrate classroom nutrition lessons with related nonclassroom activities. A nutrition education coordinator can also bring a background and skills in nutrition to schools. In the schools that do have a single nutrition education coordinator, 72 percent have a bachelor's degree or higher in nutrition or a nutrition-related area.

The overall findings indicate that although nutrition education is already of interest to public schools, there is room for additional effort. In particular, opportunities exist for development of appropriate materials and greater coordination across different subjects within the curriculum, across grade levels, and between the curriculum and other school resources like the school meals program so the messages received by students are consistent, pervasive, and aimed at motivating children to choose a healthy diet.

Appendix A

Survey Methodology
and
Data Reliability

Survey Methodology and Data Reliability

Sample Selection

The sampling frame for the FRSS *Nutrition Education Survey* was constructed from the 1992-93 NCES Common Core of Data (CCD) public school universe file and included over 78,000 public elementary, middle, and high schools. Excluded from the frame were special education, vocational, and alternative/other schools, schools in the territories, and schools with the highest grade lower than grade one.

Separate samples of 333 elementary, 333 middle, and 334 high schools were selected for the survey. The samples were stratified by geographic region (northeast, southeast, central, west), metropolitan status (city, urban fringe, town, rural), and school size (less than 300; 300 to 499; and 500 or more) (table A-1).

Table A-1.—Weighted and unweighted number of responding schools for FRSS 52, by classification variables: 1995

	Unweighted	Weighted
Total	916	76,956
Instructional level		
Elementary	295	47,734
Middle	312	13,485
High school	309	15,737
Geographic region		
Northeast	172	14,379
Southeast	221	16,363
Central	238	22,876
West	285	23,065
Enrollment size		
Less than 300	131	19,871
300 - 500	185	22,272
500 or more	600	34,813
Metropolitan status		
City	224	17,800
Urban fringe	238	18,083
Town	242	19,161
Rural	212	21,913

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Respondents and Response Rates

In April of 1995, questionnaires (see appendix C) were mailed to 1,000 public school principals. The principals were asked to direct the survey to the person most knowledgeable about nutrition education in the school and ask that person to complete the survey. Of the schools sampled, 12 were found to be out of scope (no longer at the same location or serving the same population), leaving 988 eligible schools in the sample. Telephone followup was initiated in mid-May and data collection was completed on July 7, with 916 respondents. The final response rate was 93 percent. Item nonresponse rates ranged from 0.0 percent to 1.0 percent.

Sampling and Nonsampling Errors

The responses were weighted to produce national estimates. The weights were designed to adjust for the variable probabilities of selection and differential nonresponse. The findings in this report are estimates based on the sample selected and, consequently, are subject to sampling variability.

The survey estimates are also subject to nonsampling errors that can arise because of nonobservation (nonresponse or noncoverage) errors, errors of reporting, and errors made in the collection of the data. These errors can sometimes bias the data. Nonsampling errors may include such problems as the differences in the respondents' interpretations of the meaning of the questions; memory effects; misrecording of responses; incorrect editing, coding, and data entry; differences related to the particular time the survey was conducted; or errors in data preparation. While general sampling theory can be used in part to determine how to estimate the sampling variability of a statistic, nonsampling errors are not easy to measure and, for measurement purposes, usually require that an experiment be conducted as part of the data collection procedures or that data external to the study be used.

To minimize the potential for nonsampling errors, the questionnaire was pretested with knowledgeable respondents like those who completed the survey. During the design of the survey and the survey pretest, an effort was made to check for consistency of interpretation of questions and to eliminate ambiguous terms. The questionnaire and instructions were extensively reviewed by the Food and Consumer Service and the National Center for Education Statistics. Manual and machine editing of the questionnaire responses were conducted to check the data for accuracy and consistency. Cases with missing or inconsistent items were recontacted by telephone. Imputations for item nonresponse were not implemented, as item nonresponse rates were very low. Data were keyed with 100 percent verification.

Variances

The standard error is a measure of the variability of estimates due to sampling. It indicates the variability of a sample estimate that would be obtained from all possible samples of a given design and size. Standard errors are used as a measure of the precision expected from a particular sample. If all possible sampled were surveyed under similar conditions, intervals of 1.96 standard errors below to 1.96 standard errors above a particular statistic would include the true population parameter being estimated in about 95 percent of the samples. This is what is called a 95 percent confidence interval. For example, the estimated percentage of public elementary schools with no nutrition education coordination is 66 percent and the estimated standard error is 3.0 percent. The 95 percent confidence interval for this statistic extends from [66 - (1.96 x 3) to 66 + (1.96 x 3)], or from 61.5 to 70.5.

Estimates of standard errors were computed using a technique known as jackknife replication. As with any replication method, jackknife replication involved constructing a number of subsamples (replicates) from the full sample and computing the statistic of interest for each replicate. The mean square error of the replicate estimates around the full sample estimate provides an estimate of the variance of the statistic. To construct the replications, 50 stratified subsamples of the full sample were created and then dropped, one at a time, to define 50 jackknife replicates. A proprietary computer program (WESVAR), available at Westat, Inc., was used to calculate the estimates of standard errors.

Background Information

The survey was conducted under contract with Westat, Inc., using the NCES Fast Response Survey System (FRSS). Westat's project director was Elizabeth Farris, and the survey manager was Carin Celebuski. Judi Carpenter was the NCES project officer. The data were requested by Leslie Christovich and Marie Mitchell from the Food and Consumer Service of the USDA. Marie Mitchell coordinated the project for the USDA.

The survey instrument was developed with input from several persons in the field of nutrition education, including individuals from the Nutrition Education and Training Program and the Education Information Advisory Committee (EIAC) of the Council of Chief State School Officers. The EIAC committee members were the following:

- John Perkins, Texas
- Kathy Kuser, New Jersey
- Joe Worden, Florida

- Josephine Busha, Vermont
- Betty Marcelynas, Washington
- Jim Burke, Illinois
- Maria Balakshin, California
- Michael Smith, Wyoming

The report was reviewed by the following individuals:

Outside NCES

- Leslie Lytle, University of Minnesota
- Barbara Shannon, Pennsylvania State University

Inside NCES

- Jonaki Bose, NCES
- Mike Cohen, NCES
- Edith McArthur
- Mary Rollefson, NCES
- Peter Stowe, NCES

For more information about the Fast Response Survey System or the *Nutrition Education Survey*, contact Judi Carpenter, Elementary/Secondary Statistics Division, Office of Educational Research and Improvement, National Center for Education Statistics, 555 New Jersey Avenue, NW, Washington, DC 20208-5651, telephone (202) 219-1333.

Terms Defined on the Survey Questionnaire

Nutrition education - refers to curricula, courses, lesson plans and units, and activities designed to provide instruction with regard to the nutritional value of foods and the relationship between food and human health. Nutrition education can also be provided through nonclassroom activities and events such as special assemblies and health fairs, etc.

School health program - a program that may include school health education and physical education; school-linked or school-based

health services designed to prevent, detect, and address health problems; psychological assessment and counseling to promote child development and emotional health; healthful school food service selections; schoolsite health promotion for faculty and staff; and integrated school and community health promotion efforts.

Nutrients - the nourishing components in food, such as vitamins, minerals, proteins, carbohydrates, fats, etc.

Nutrition-related area - academic subject areas related to nutrition (e.g., home economics, science, health, physical education, dietetics).

Cooperative Extension Service - a public-funded, nonformal educational system that links the USDA, land-grant universities, and counties. Its purpose is to diffuse practical information on subjects related to agriculture, home economics, and rural energy.

Materials - lesson plans, curriculum guides, posters, pamphlets, and multimedia, etc., designed to improve health, achieve positive change in dietary habits, and emphasize the relationship between diet and health.

Classification Variables

Metropolitan Status

Urban - a central city of a Metropolitan Statistical Area (MSA).

Urban fringe - a place within an MSA, but not primarily its central city.

Town - a place not within an MSA, but with a population greater than or equal to 2,500, and defined as urban by the U.S. Bureau of the Census.

Rural - a place with a population less than 2,500 and defined as rural by the U.S. Bureau of the Census.

Geographic Region

Northeast - Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

Southeast - Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

Central - Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

West - Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oklahoma, Oregon, Texas, Utah, Washington, and Wyoming.

Instructional Level

Elementary school- Schools beginning with grade 6 or lower and with no grade higher than 8.

Middle school - Schools with a low grade of 4 to 7 and a high grade of 4 to 9.

High school - Schools with a grade 12 and no grade lower than 9. Combined schools, with both elementary and secondary grades, were included with high schools for sampling purposes.

Appendix B

Tables of Standard Errors

List of Tables of Standard Errors

List of Tables of Standard Errors (continued)

Table 1a.—Standard errors of the percent of public schools offering nutrition education within the school curriculum, by school characteristics: 1995

School characteristic	Within curriculum	Integrated within the total curriculum	Health curriculum	Science curriculum	School health program	Home economics curriculum
All public schools	0.3	1.6	1.6	1.9	2.0	1.5
Instructional level						
Elementary school	0.5	2.1	2.3	2.7	3.0	2.3
Middle school	0.5	2.5	2.2	2.7	2.5	2.9
High school	0.5	3.0	1.5	3.0	2.8	2.0
Size of enrollment						
Small	1.2	4.9	3.9	4.3	4.1	4.1
Moderate	0.3	3.3	2.9	4.0	4.1	2.2
Large	0.2	1.6	1.7	2.0	2.0	1.8
Metropolitan status						
City	1.3	2.4	3.2	3.5	4.3	3.2
Urban fringe	0.3	3.3	3.4	3.8	3.5	2.8
Town	0.4	3.0	2.9	4.4	3.8	3.6
Rural	0.0	3.6	3.0	3.7	3.5	3.9
Geographic region						
Northeast	0.0	4.0	3.9	4.8	4.5	4.0
Southeast	1.4	3.0	3.8	4.2	4.5	3.4
Central	1.3	3.5	3.0	4.5	4.4	3.8
West	0.4	3.2	2.6	3.1	3.4	2.6

NOTE: Respondents could report nutrition education in more than one place.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 2a.—Standard errors of the percent of public schools where nutrition is taught, by grade and geographic region: 1995

Grade	All public schools	Northeast	Southeast	Central	West
Kindergarten	1.6	4.1	3.4	3.1	3.2
1st grade	1.4	4.6	3.2	2.6	2.0
2nd grade	1.3	4.1	2.5	2.2	1.8
3rd grade	1.5	4.3	2.5	3.2	2.3
4th grade	1.2	4.0	0.0	2.6	2.5
5th grade	1.4	4.2	2.1	3.6	2.5
6th grade	1.6	2.9	1.8	3.8	3.1
7th grade	1.3	3.9	0.9	2.0	2.8
8th grade	1.5	4.7	2.1	2.6	3.1
9th grade	1.7	4.3	4.1	3.1	2.6
10th grade	1.9	5.1	2.7	4.2	2.7
11th grade	2.5	4.1	3.4	4.8	4.7
12th grade	2.5	4.9	3.4	4.2	4.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 3a.—Standard errors of the percent of public schools where nutrition education is required, by grade and geographic region: 1995

Grade	All public schools	Northeast	Southeast	Central	West
Kindergarten	3.3	7.0	6.0	5.0	5.2
1st grade	2.8	6.6	5.3	4.8	4.9
2nd grade	2.8	7.0	5.6	5.1	5.1
3rd grade	2.7	7.6	5.6	5.4	5.4
4th grade	2.9	8.0	5.8	5.5	5.2
5th grade	2.8	7.4	5.6	5.7	5.1
6th grade	2.8	8.6	7.0	6.7	5.5
7th grade	3.1	8.2	7.1	7.4	6.1
8th grade	3.4	8.7	7.2	7.1	5.7
9th grade	2.9	6.5	6.5	6.3	6.2
10th grade	3.1	7.4	5.7	5.1	6.9
11th grade	2.2	6.8	4.5	4.7	5.0
12th grade	2.3	6.3	4.5	4.7	4.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 4a.—Standard errors of the percent of public schools that cover various topics in nutrition education, the percent that cover them thoroughly, and the percent for whom the topic represents a main focus of nutrition education at their school: 1995

Topic	Covered	Covered thoroughly	Represents a main focus*
Relationship between diet and health	0.8	2.0	1.8
Finding and choosing healthy foods	0.8	1.6	2.0
Nutrients and their food sources	0.8	2.0	1.8
Food Guide Pyramid	1.0	2.3	2.1
Dietary guidelines and goals	1.1	1.8	1.7
Reading food labels	1.2	2.0	1.4
Influences on food choices, such as habits, advertising, beliefs, and cultural preferences	1.2	1.7	1.4
Changing eating habits (e.g., willingness to try new foods)	1.6	1.6	1.2
Link between diet and diseases such as hypertension, heart disease, and cancer	1.9	1.9	1.1
Interpreting nutritional information from food labels	1.7	2.1	1.0
Healthy weight control	1.9	1.7	0.8
Preparing healthy food	1.9	2.2	0.9
Developing a personal nutrition plan	2.1	1.7	0.7
Body image	2.3	1.6	0.8
Signs and symptoms of eating disorders and health risks of .diets, pills, binging, and purging	2.0	1.9	1.1
Keeping a food diary	1.9	1.8	0.4
Association between eating and stress	2.1	1.8	0.7

*Schools were asked to report up to three.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 5a.—Standard errors of the percent of public schools that cover various topics in nutrition education, by instructional level: 1995

Topic	All public schools	Elementary school	Middle school	High school
Relationship between diet and health	0.8	1.3	1.0	0.8
Finding and choosing healthy foods	0.8	1.1	1.0	0.6
Nutrients and their food sources	0.8	1.2	1.2	1.5
Food Guide Pyramid	1.0	1.5	1.4	1.4
Dietary guidelines and goals	1.1	1.7	1.7	1.2
Reading food labels	1.2	1.9	1.5	1.0
Influences on food choices, such as habits, advertising, beliefs, and cultural preferences	1.2	2.0	1.7	1.2
Changing eating habits (e.g., willingness to try new foods)	1.6	2.5	2.2	1.3
Link between diet and diseases such as hypertension, heart disease, and cancer	1.9	3.0	1.5	1.4
Interpreting nutritional information from food labels	1.7	2.7	1.6	1.4
Healthy weight control	1.9	3.0	1.7	1.2
Preparing healthy food	1.9	3.0	1.8	1.5
Developing a personal nutrition plan	2.1	3.4	2.4	2.1
Body image	2.3	3.5	2.7	1.6
Signs and symptoms of eating disorders and health risks of diets, pills, binging, and purging	2.0	3.2	1.7	0.9
Keeping a food diary	1.9	3.0	2.8	2.7
Association between eating and stress	2.1	3.0	2.6	2.2

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 6a.—Standard errors of the percent of public schools with various types of nutrition education coordination, by school characteristics: 1995

School characteristic	One person for the whole school	Several teachers, a group or committee	Someone outside the school*	No coordination effort
All public schools	1.4	1.8	1.0	2.2
Instructional level				
Elementary school	1.8	2.4	1.6	3.0
Middle school	2.3	2.8	1.0	2.8
High school	1.8	2.7	1.1	3.1
Size of enrollment				
Small	2.9	3.6	3.0	4.8
Moderate	2.2	3.5	2.2	4.0
Large	1.4	2.1	1.2	2.3
Metropolitan status				
City	2.4	2.5	2.8	4.3
Urban fringe	2.5	3.4	2.3	3.7
Town	2.4	3.7	1.5	4.5
Rural	2.2	3.1	1.5	3.4
Geographic region				
Northeast	3.3	3.4	2.6	5.1
Southeast	2.2	3.4	2.6	3.8
Central	2.8	3.9	1.9	4.4
West	1.8	2.6	1.6	3.1

*For example, from the district.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 7a.—Standard errors of the percent of public schools offering nutrition education within the school curriculum, by person or group responsible for coordinating nutrition education: 1995

Placement of nutrition education	One person for the whole school	Several teachers, a group or committee	Someone outside the school*	No coordination effort
Integrated throughout curriculum	6.7	3.3	6.8	2.2
Health curriculum	4.9	2.3	5.9	2.2
Science curriculum	5.8	4.4	8.2	2.2
School health program	5.9	2.7	7.5	2.7
Home economics curriculum	5.7	3.8	4.3	2.0

*For example, from the district.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 8a.—Standard errors of the percent of public schools that use various types of materials to teach nutrition education, by instructional level: 1995

Type of material used	All public schools	Elementary school	Middle school	High school
From external sources	.9	1.4	1.4	1.4
Developed by teachers in your school	1.3	1.8	2.2	1.6
Health or science textbooks	1.2	1.8	1.6	1.5
Developed for a specific grade level	1.6	2.2	2.6	2.9
State-recommended	2.3	3.6	2.9	2.4
State-mandated	2.4	3.8	2.8	3.0
Developed by district-level curriculum coordinator	2.0	3.1	3.0	2.8

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 9a.—Standard errors of the percent of public schools that receive and use materials for nutrition education from various sources: 1995

Source	Materials received	All or most materials used*
All sources	0.7	-
Professional or trade association	1.4	2.4
Food industry or commodities group	1.5	2.1
School library	1.7	2.5
Cooperative Extension Service	1.9	2.2
USDA Food and Nutrition Information Center	2.1	2.7
State education agency	2.5	3.1
State Nutrition Education Training (NET) Program	2.6	3.4
American School Food Service Association	2.8	2.8
Colleges or universities	1.9	3.0
National Food Service Management Institute	2.7	4.0

*Of schools that received the materials.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 10a.—Standard errors of the percent of public schools that receive and use materials for nutrition education from the Cooperative Extension Service, by school characteristics: 1995

School characteristic	Materials received	All or most materials used*
All public schools	1.9	2.2
Size of enrollment		
Small	4.4	5.4
Moderate	4.8	4.1
Large	2.4	2.9
Metropolitan status		
City	4.6	5.3
Urban fringe	4.8	5.2
Town	3.8	4.3
Rural	3.5	3.9

*Of schools that received the materials.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 11a.—Standard errors of the percent of public schools where the school meals program provides nutrition education or coordinates with classroom efforts, by instructional level: 1995

Meals program effort	All public schools	Elementary school	Middle school	High school
Any effort	1.1	1.0	1.2	1.3
Bulletin board with nutrition displays	1.9	2.7	2.8	3.5
School lunch week	2.1	3.0	2.5	3.2
Nutrient information	1.9	2.9	3.2	2.9
Serves meals to correspond with classroom activities	1.9	2.8	3.0	2.7
Tours	2.3	3.2	3.1	2.9
Nutrition input to newsletter	1.9	2.9	3.0	2.8
Education in classroom	2.0	3.0	2.5	2.2
Tasting parties	1.8	2.8	2.1	2.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 12a.—Standard errors of the percent of public schools where the school meals program provides nutrition education or coordinates with classroom efforts, by geographic region: 1995

Meals program effort	All public schools	Northeast	Southeast	Central	West
Any effort	1.1	2.0	1.4	2.5	2.2
Bulletin board with nutrition displays	1.9	4.9	2.6	3.5	4.1
School lunch week	2.1	4.3	3.5	3.6	3.9
Nutrient information	1.9	5.9	3.9	4.2	3.7
Serves meals to correspond with classroom activities	1.9	4.5	3.9	3.5	3.6
Tours	2.3	4.1	4.2	3.1	4.0
Nutrition input to newsletter	1.9	4.7	4.3	3.5	3.1
Education in classroom	2.0	3.5	4.8	3.1	3.3
Tasting parties	1.8	3.9	3.9	2.7	2.9

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 13a.—Standard errors of the percent of public schools where the school meals program solicits input through a student advisory group or pretesting new foods, by instructional level: 1995

Type of input	All public schools	Elementary school	Middle School	High school
Student advisory group provides input to the meal service	2.4	3.4	3.2	2.8
School food service director has parents and students pretest new foods for the cafeteria	1.5	2.2	2.7	2.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 14a.—Standard errors of percent of public schools that report various meals program efforts, by whether the respondent is of the opinion that their school meals program follows generally healthy eating practices: 1995

Meals program effort	Reported following generally healthy eating practices	Reported not following generally healthy eating practices
Bulletin board with nutrition displays	2.1	1.3
School lunch week	2.5	3.6
Nutrient information	2.2	3.8
Serves meals to correspond with classroom activities	2.1	3.6
Tours	2.2	3.1
Nutrition input to newsletter	2.3	2.9
Education in classroom	2.0	4.8
Tasting parties	2.2	2.8

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Table 15a.—Estimates and standard errors for the figures: 1995

Figure	Estimate	Standard error
Figure 1: Percent of public schools where nutrition is taught and where nutrition education is required, by grade: 1995		
Percent taught		
Kindergarten	92	1.6
1st grade	94	1.4
2nd grade	96	1.3
3rd grade	94	1.5
4th grade	96	1.2
5th grade	93	1.4
6th grade	93	1.6
7th grade	95	1.3
8th grade	91	1.5
9th grade	91	1.7
10th grade	92	1.9
11th grade	84	2.5
12th grade	84	2.5
Percent required		
Kindergarten	58	3.3
1st grade	61	2.8
2nd grade	62	2.8
3rd grade	60	2.7
4th grade	62	2.9
5th grade	60	2.8
6th grade	58	2.8
7th grade	58	3.1
8th grade	50	3.4
9th grade	40	2.9
10th grade	40	3.1
11th grade	23	2.2
12th grade	20	2.3
Figure 2: Percent of public schools where nutrition is taught and where nutrition is required in at least one grade, by instructional level: 1995		
Percent taught		
All public schools	99	0.5
Elementary school	99	0.5
Middle school	98	1.1
High school	97	1.3
Percent required		
All public schools	64	1.7
Elementary school	68	2.6
Middle school	61	2.8
High school	54	3.0

Table 15a.—Estimates and standard errors for the figures: 1995 (continued)

Figure	Estimate	Standard error
Figure 3: Percent of coordinators with various highest levels of training in nutrition or a nutrition-related area: 1995		
Highest training		
Graduate degree	34	6.4
Bachelor's degree	38	5.0
Associate's degree	1	0.8
College coursework	5	2.8
Inservice training	20	6.9
None	2	1.8
Figure 4: Percent of public schools that report student and parent input into the meals program, by geographic region: 1995		
Input from student advisory group to the meal service		
All public schools	34	2.4
Northeast	34	5.3
Southeast	46	4.8
Central	29	4.3
West	31	3.4
Figure 5: Percent of respondents who are of the opnion that their school meals program follows general healthy eating practices, by instructional level: 1995		
Instructional level		
All public schools	84	1.6
Elementary school	88	2.1
Middle school	76	2.5
High school	77	2.7
Parents and students pretest new foods for the cafeteria		
All public schools	20	1.5
Northeast	18	3.6
Southeast	26	3.8
Central	19	3.0
West	18	2.2
Figure 6. Percent of public schools that use special events for nutrition education: 1995		
Guest speakers or health fairs	74	2.1
Guest speakers	63	2.5
Health fairs	25	2.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Nutrition Education in U.S. Public Schools, K-12," FRSS 52, 1995.

Appendix C

Survey Form

U.S. DEPARTMENT OF EDUCATION NATIONAL CENTER FOR EDUCATION STATISTICS WASHINGTON, D.C. 20208-5651 **NUTRITION EDUCATION IN U.S. PUBLIC SCHOOLS, K-12** FAST RESPONSE SURVEY SYSTEM	OMB NO.: 1850-0715 EXPIRATION DATE: 5/31/96

This survey is authorized by law (20 U.S.C. 1221e-1). While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

DEFINITIONS FOR THIS SURVEY:

Nutrition education - refers to curricula, courses, lesson plans and units, and activities designed to provide instruction with regard to the nutritional value of foods and the relationship between food and human health. Nutrition education can also be provided through nonclassroom activities and events such as special assemblies and health fairs, etc.

School health program - a program that may include school health education and physical education; school-linked or school-based health services designed to prevent, detect, and address health problems; psychological assessment and counseling to promote child development and emotional health; healthful school food service selections; schoolsite health promotion for faculty and staff; and integrated school and community health promotion efforts.

Nutrients - the nourishing components in food, such as vitamins, minerals, proteins, carbohydrates, fats, etc.

Nutrition-related area - academic subject areas related to nutrition (e.g., home economics, science, health, physical education, dietetics).

Cooperative Extension Service - a public-funded, nonformal educational system that links the U.S. Department of Agriculture, land-grant universities, and counties. Its purpose is to diffuse practical information on subjects relating to agriculture, home economics, and rural energy.

Materials - lesson plans, curriculum guides, posters, pamphlets, and multimedia, etc., designed to improve health, achieve positive change in dietary habits, and emphasize the relationship between diet and health.

NA - grade is not taught in this school.

AFFIX LABEL HERE

IF ABOVE INFORMATION IS INCORRECT, PLEASE MAKE CORRECTIONS DIRECTLY ON LABEL.

Name of person completing form: _____ Title: _____

Telephone: _____ Fax: _____ E:mail: _____

Best days and times to reach you (in case of questions): _____

PLEASE RETURN COMPLETED FORM TO:	IF YOU HAVE ANY QUESTIONS, CONTACT:
WESTAT 1650 Research Boulevard Rockville, Maryland 20850 Attention: 900131-Celebuski	Carin Celebuski 800-937-8281, ext. 3986 Fax: 301-294-3992 E:mail: celebuc1@westat.com

The time required to complete this information collection is estimated to average 30 minutes per response, including the time to review instructions, search existing data resources, gather and maintain the data needed, and complete and review the information collection. **If you have any comments concerning the accuracy of the time estimate(s) or suggestions for improving this form, please write to**: U.S. Department of Education, Washington, DC 20202-4651.

NCES Form No. 52

Please refer to the definitions on the cover page for words in bold type.

1. Does your school offer **nutrition education** for students in the following ways? *(Circle "yes" or "no" for each line.)*

	Yes	No
a. Integrated within the total school curriculum	1	2
b. Within a **school health program**	1	2
c. Within the health curriculum	1	2
d. Within the science curriculum	1	2
e. Within the home economics curriculum	1	2
f. Through the school meals program	1	2
g. Through nonclassroom activities, assemblies, or events	1	2

2. Are the following nutrition topics covered in any grade at your school? If yes, to what extent is the topic covered? *(Circle "yes" or "no" for each topic. If "yes" for topic, circle extent of coverage.)*

	Covered?		Extent of coverage		
Knowledge	Yes	No	Mentioned	Covered somewhat	Covered thoroughly
a. Dietary guidelines and goals	1	2	1	2	3
b. Food guide pyramid	1	2	1	2	3
c. **Nutrients** and their food sources	1	2	1	2	3
d. Relationship between diet and health	1	2	1	2	3
e. Link between diet and diseases such as hypertension, heart disease, and cancer	1	2	1	2	3
f. Signs and symptoms of eating disorders and health risks of diets, pills, binging, and purging	1	2	1	2	3
g. Healthy weight control	1	2	1	2	3
Motivation and attitudes					
h. Influences on food choices, such as habits, advertising, beliefs, and cultural preferences	1	2	1	2	3
i. Association between eating and stress	1	2	1	2	3
j. Body image	1	2	1	2	3
k. Changing eating habits (e.g., willingness to try new foods)	1	2	1	2	3
Behaviors					
l. Finding and choosing healthy foods	1	2	1	2	3
m. Developing a personal nutrition plan	1	2	1	2	3
n. Keeping a food diary	1	2	1	2	3
o. Reading food labels	1	2	1	2	3
p. Interpreting nutritional information from food labels	1	2	1	2	3
q. Preparing healthy food	1	2	1	2	3
Other topics (*specify*)					
r. _____	1	2	1	2	3
s. _____	1	2	1	2	3

3. Using the letters corresponding to the topics in question 2 above, report the 3 topics that represent the general focus of **nutrition education** at your school. Topics with main focus: i. _____ ii. _____ iii. _____

4. Indicate the grades in your school in which nutrition is taught and whether each grade has nutrition education requirements (e.g., from your district or your state). *(Circle "yes" or "no" for taught, or "NA" for grades not in your school. Then circle "yes" or "no" for required.)*

	Is nutrition taught in this grade at your school?			Is nutrition education required in this grade by your district or state?	
	Yes	No		Yes	No
Kindergarten	1	2	**NA**	1	2
1st grade	1	2	**NA**	1	2
2nd grade	1	2	**NA**	1	2
3rd grade	1	2	**NA**	1	2
4th grade	1	2	**NA**	1	2
5th grade	1	2	**NA**	1	2
6th grade	1	2	**NA**	1	2
7th grade	1	2	**NA**	1	2
8th grade	1	2	**NA**	1	2
9th grade	1	2	**NA**	1	2
10th grade	1	2	**NA**	1	2
11th grade	1	2	**NA**	1	2
12th grade	1	2	**NA**	1	2

5. Who has the primary responsibility for the coordination of **nutrition education** at your school? *(Circle one.)*

One person for the whole school	1	*(TITLE OF COORDINATOR _____)*
Several teachers, a group or committee	2	*(Skip to question 7)*
No one, each teacher on his/her own	3	*(Skip to question 7)*
Someone outside the school (e.g., from the district)	4	*(Skip to question 7)*

6. Indicate the education and training in nutrition and **nutrition-related areas** that the **nutrition education** coordinator at your school has completed. *(Circle "yes" or "no" for each column of each line.)*

	Nutrition		Nutrition-related area	
	Yes	**No**	**Yes**	**No**
a. Graduate degree	1	2	1	2
b. Bachelor's degree (major or minor)	1	2	1	2
c. Associate's degree (major or minor)	1	2	1	2
d. College-level coursework	1	2	1	2
e. Inservice or other training	1	2	1	2

7. Does your school receive packaged **materials**, lesson plans, or other **nutrition education** resources from any of the following sources? Are **materials** from these sources used in your school to teach nutrition education? *(Circle "yes," "no," or "don't know" for each source. If "yes" to source, circle "use all or most," "use some," or "use none.")*

	Source?			If yes to source		
	Yes	**No**	**Don't know**	**Use all or most**	**Use some**	**Use none**
a. **Cooperative Extension Service**	1	2	9	1	2	3
b. Colleges or universities	1	2	9	1	2	3
c. Professional or trade associations (e.g., the American Heart Association)	1	2	9	1	2	3
d. Food industry or commodities group (e.g., the Dairy Council)	1	2	9	1	2	3
e. USDA Food and Nutrition Information Center	1	2	9	1	2	3
f. State Nutrition Education Training (NET) program	1	2	9	1	2	3
g. State education agency	1	2	9	1	2	3
h. National Food Service Management Institute	1	2	9	1	2	3
i. American School Food Service Association	1	2	9	1	2	3
j. School library	1	2	9	1	2	3
k. OTHER (*specify*) _____	1			1	2	3

8. Are the following **materials** and resources used in your school to teach nutrition? *(Circle "yes" or "no" for each line. For "g" and "h" specify the number in the 1994-95 school year.)*

	Yes	**No**	
a. **Materials** developed by teachers in your school	1	2	
b. **Materials** developed for a specific grade level	1	2	
c. State-mandated **materials**	1	2	
d. State-recommended **materials**	1	2	
e. **Materials** developed by district-level curriculum coordinator	1	2	
f. Health or science textbooks	1	2	
g. Guest speakers	1	2	(*NUMBER IN 1994-95* _____)
h. Health fairs	1	2	(*NUMBER IN 1994-95* _____)
i. OTHER (*specify*) _____	1		

9. Does your school meals program provide **nutrition education** or coordinate with classroom and administrative efforts in the following ways? *(Circle "yes" or "no" for each line.*)

	Yes	**No**
a. Sponsors tasting parties	1	2
b. Provides cafeteria/kitchen tours	1	2
c. Meal service follows generally healthy eating practices	1	2
d. Provides any type of **nutrient** information on cafeteria line	1	2
e. Serves meals to correspond with classroom activities (e.g., menus from countries studied in social studies, menus to support special weeks such as "citrus week")	1	2
f. School food services staff provide education in the classroom	1	2
g. Student advisory group provides input to the meal service	1	2
h. Sponsors "school lunch week" where parents eat with students and participate in other activities	1	2
i. School food service director has parents and students pretest new foods for the cafeteria	1	2
j. School has a cafeteria bulletin board with nutrition displays	1	2
k. Provides nutrition input to parent/student newsletters	1	2
l. OTHER (*specify*) _____	1	

*Please provide comments or information on other **nutrition education** practices at your school on the reverse side.*

May we have your comments or information on other nutrition education practices at your school? Tell us about the interesting things you are doing.

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The Food and Nutrition Information Center located at the National Agricultural Library can help you locate nutrition education materials.
Contact the Center to receive a free copy of:
***Nutrition Education Printed Materials and Audiovisuals, Grades Preschool - 6,* or**
Nutrition Education Printed Materials and Audiovisuals, Grades 7 - 12.

You can reach them by phone at: 301-504-5791,
by fax at: 301-504-6409,
by Internet e:mail at: fnic@nalusda.gov,
or by writing:
Food and Nutrition Information Center
National Agricultural Library/USDA
10301 Baltimore Boulevard
Room 304
Beltsville, MD 20705-2351

THANK YOU!

Appendix D

U.S. Public Law 103-448. 103d Cong., 2 Nov. 1994. Child Nutrition Act of 1966

Section 19(a)

"Congress finds that -- (1) the proper nutrition of the Nation's children is a matter of highest priority; (2) the lack of understanding of the principles of good nutrition and their relationship to health can contribute to a child's rejection of highly nutritious foods and consequent plate waste in school food service operations; (3) many school food service personnel have not had adequate training in food service management skills and principles, and many teacher and school food service operators have not had adequate training in the fundamentals of nutrition or how to convey this information so as to motivate children to practice sound eating habits; (4) parents exert a significant influence on children in the development of nutritional habits and lack of nutritional knowledge on the part of parents can have detrimental effects on children's nutritional development; and (5) there is a need to create opportunities for children to learn about the importance of the principles of good nutrition in their daily lives and how these principles are applied in the school cafeteria."